

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

1                   1 (original): A nanofiber comprising a first polymer and a biological material,  
2 wherein said nanofiber has a plurality of nanopores.

1                   2 (original): The nanofiber of claim 1, wherein said first polymer is a synthetic  
2 polymer.

1                   3 (original): The nanofiber of claim 1, wherein said first polymer is a naturally  
2 occurring polymer.

1                   4 (original): The nanofiber of claim 2, wherein said synthetic polymer is a  
2 member selected from the group consisting of: poly(ethylene oxide), poly(vinyl alcohol),  
3 poly(ethylene naphthalate), polyaniline, polyacrylic acid, polyacrylon nitrile, polystyrene,  
4 polymethylmethacrylate, poly(N-isopropylacrylamide), polyvinyl acetate, and derivatives  
5 thereof.

1                   5 (original): The nanofiber of claim 3, wherein said naturally occurring polymer  
2 is a member selected from the group consisting of: polysaccharides, polypeptides, cellulose,  
3 poly-L-lactide, cellulose, casein, and derivatives thereof.

1                   6 (original): The nanofiber of claim 1, wherein said biological material and said  
2 first polymer are present in a ratio of about 1:20 to about 20:1.

1                   7 (original): The nanofiber of claim 1, wherein said biological material and said  
2 first polymer are present in a ratio of about 1:10 to about 10:1.

1                   8 (original): The nanofiber of claim 1, wherein said biological material and said  
2 first polymer are present in a ratio of about 1:5 to about 5:1.

1                   9 (original): The nanofiber of claim 1, wherein said biological material and said  
2 first polymer are present in a ratio of 1:4.

1                   10 (original): The nanofiber of claim 1, wherein said biological material is  
2 covalently attached to said nanofiber via a linker.

1                   11 (original): The nanofiber of claim 10, wherein said linker is a member  
2 selected from the group consisting of: polyethylene glycol (PEG), polyacrylic acid (PAA),  
3 polyacrylamide (PAM) as non-ionic, and dimethylaminoethyl methacrylate (DMAEMA) or  
4 combinations thereof.

1                   12 (original): The nanofiber of claim 1, wherein said nanofiber is about 50 nm to  
2 about 1000 nm in diameter.

1                   13 (original): The nanofiber of claim 1, wherein said nanopores are about 5 nm  
2 to about 500 nm in diameter.

1                   14 (original): The nanofiber of claim 1, wherein said nanopores are about 25 nm  
2 to about 100 nm in diameter.

1                   15 (original): The nanofiber of claim 1, wherein said nanopores are about 5 nm  
2 to about 25 nm in diameter.

1                   16 (original): The nanofiber of claim 1, wherein said nanopores are about 10 nm  
2 to about 50 nm in diameter.

1                   17 (original): The nanofiber of claim 1, wherein said nanofiber is insoluble in an  
2 aqueous solution.

1                   18 (original): The nanofiber of claim 1, wherein said nanofiber is insoluble in an  
2 organic solution.

1                   19 (original): The nanofiber of claim 18, wherein said first polymer is  
2 crosslinked.

1                   20 (original): The nanofiber of claim 1, further comprising a second polymer.

1                   21 (original): The nanofiber of claim 20, wherein said first polymer and said  
2 second polymer are present in a ratio of about 1:20 to about 20:1.

1                   22 (original): The nanofiber of claim 20, wherein said first polymer and said  
2 second polymer are present in a ratio of about 1:10 to about 10:1.

1                   23 (original): The nanofiber of claim 20, wherein said first polymer and said  
2 second polymer are present in a ratio of 4:1.

1                   24 (original): The nanofiber of claim 20, wherein said first polymer and said  
2 second polymer are present in a ratio of 1:4.

1                   25 (original): The nanofiber of claim 20, wherein said first polymer and said  
2 second polymer are present in a ratio of 1:1.

1                   26 (original): The nanofiber of claim 20, wherein said first polymer is a synthetic  
2 organic polymer and said second polymer is a naturally occurring polymer.

1                   27 (original): The nanofiber of claim 1, wherein said biological material is a  
2 protein.

1                   28 (original): The nanofiber of claim 27, wherein said protein is a member  
2 selected from the group consisting of: integral membrane proteins, structural proteins,  
3 intracellular proteins, and enzymes.

1                   29 (original): The nanofiber of claim 26, wherein said synthetic organic polymer  
2 is a member selected from the group consisting of: poly(ethylene oxide), poly(vinyl alcohol),  
3 poly(ethylene naphthalate), polyaniline, polyacrylic acid, polyacrylon nitrile, polysaccharides,  
4 cellulose, poly-L-lactide, polystyrene, polymethylmethacrylate, poly(N-isopropylacrylamide),  
5 polyvinyl acetate and derivatives thereof, and said naturally occurring polymer is a member  
6 selected from the group consisting of: polysaccharides, polypeptides, cellulose, poly-L-lactide,  
7 cellulose, casein, and derivatives thereof.

1                   30 (original): The nanofiber of claim 28, wherein said protein is an enzyme.

1                   31 (original): The nanofiber of claim 30, wherein said enzyme is a member  
2 selected from the group consisting of: a lipase, a carbohydrolase, a DNase, and a protease.

1                   32 (original): A membrane comprising a nanofiber comprising a first polymer  
2 and a biological material, wherein said nanofiber has a plurality of nanopores.

1                   33 (original): The membrane of claim 32, wherein said membrane is insoluble in  
2 an aqueous solution.

1                   34 (original): The membrane of claim 32, wherein said membrane is insoluble in  
2 an organic solution.

1                   35 (original): The membrane of claim 32, wherein said biological material is  
2 attached to said membrane via a linker.

1                   36 (original): The membrane of claim 35, wherein said linker is PEG.

1                   37 (original): The membrane of claim 35, wherein said linker is PAA.

1                   38 (original): A fabric comprising a nanofiber comprising a first polymer and a  
2 biological material, wherein said nanofiber has a plurality of nanopores.

1                   39 (original): The fabric of claim 38, wherein said biological material is attached  
2 to said nanofiber via a linker.

1                   40 (original): The fabric of claim 38, wherein said linker is PEG.

1                   41 (original): The fabric of claim 38, wherein said linker is PAA.

1                   42 (original): An insoluble nanofiber comprising a polymer and a biological  
2 material, wherein said nanofiber is insoluble in an aqueous solution.

1                   43 (original): An insoluble nanofiber comprising a polymer and a biological  
2 material, wherein said nanofiber is insoluble in an organic solution.